

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 forming a lower cladding layer, said lower cladding layer having at least
3 one waveguide support;
4 forming a core material onto said waveguide support; and
5 forming an upper cladding layer over said core material.
- 1 2. The method of Claim 1 wherein said upper cladding layer and said
2 lower cladding layer surround said core material.
- 1 3. The method of Claim 1 wherein said core material is formed to be
2 a substantially triangular shape.
- 1 4. The method of Claim 1 wherein said core material is deposited
2 using a high density plasma chemical vapor deposition (HDPCVD) process.
- 1 5. The method of Claim 1 wherein said core material is an oxide.
- 1 6. The method of Claim 1 wherein said lower cladding layer is
2 formed by:
3 blanket depositing lower cladding material onto a substrate; and
4 patterning and etching said lower cladding material to form said
5 waveguide support.

1 7. The method of Claim 1 wherein said core material is formed to be
2 a substantially semi-circular shape.

1 8. The method of Claim 1 wherein said core material is doped with a
2 rare earth element.

1 9. The method of Claim 1 wherein said core material and said upper
2 cladding layer is deposited *in situ* with each other.

1 10. The method of Claim 1 wherein said waveguide support has a
2 width much less than a height.

1 11. A method comprising:
2 forming a lower cladding layer, said lower cladding layer having at least
3 one waveguide support;
4 forming a core material onto said waveguide support using a high density
5 plasma chemical vapor deposition (HDPCVD) process, wherein said core material
6 is an oxide; and
7 forming an upper cladding layer over said core material, wherein said
8 upper cladding layer and said lower cladding layer surround said core material.

1 12. The method of Claim 11 wherein said lower cladding layer is
2 formed by:
3 blanket depositing lower cladding material onto a substrate; and
4 patterning and etching said lower cladding material to form said
5 waveguide support.

1 13. The method of Claim 11 wherein said core material is doped with a
2 rare earth element.

1 14. The method of Claim 11 wherein said core material is formed to be
2 a substantially triangular shape.

1 15. The method of Claim 11 wherein said core material is formed to be
2 a substantially semi-circular shape.

1 16. The method of Claim 11 wherein said core material and said upper
2 cladding layer is deposited *in situ* with each other.

1 17. An optical waveguide comprising:
2 a lower cladding layer, said lower cladding layer having at least one
3 waveguide support;
4 an oxide core material formed into a substantially triangular shape onto
5 said waveguide support; and
6 an upper cladding layer formed over said core material.

1 18. The waveguide of Claim 17 wherein said core material is deposited
2 using a high density plasma chemical vapor deposition (HDPCVD) process.

1 19. The waveguide of Claim 17 wherein said core material is doped
2 with a rare earth element.